

# PATENT SPECIFICATION 708,298

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Date of filing Complete Specification : Dec. 12, 1952.

Application Date : Sept. 17, 1951. No. 21733 51.

Complete Specification Published : May 5, 1954.

Index at Acceptance :—Class 135, F7B, L4E.

## COMPLETE SPECIFICATION.

### A Valve Fitting for Use with a Waste-water Discharge Arrangement for Caravans or other Temporary Dwellings.

I, ROY WHITWORTH, British Subject, of 3 Ireton Road, Handsworth Wood, Birmingham 20, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement :—

This invention relates to valve fittings for use with waste-water discharge arrangements for caravans or other temporary dwellings, such arrangements being of that kind comprising a waste-pipe attached to a sink or wash-basin and adapted to discharge its contents into an open or partly open portable receptacle placed below the sink or wash-basin, such as on the ground beneath the floor of a caravan.

Hitherto, it has been found that with arrangements of the above kind, the user of the sink or wash-basin often forgets to remove and empty the portable waste-water receptacle (which is usually concealed from his view) at the proper time, with the result that the receptacle overflows and causes considerable inconvenience. The object of the present invention is the provision of simple and novel means for preventing overflowing of the waste water in the receptacle, and for enabling visual warning to be given to the user of the sink or wash-basin when the receptacle requires to be emptied.

According to the invention, a valve fitting, for use with a waste-water discharge arrangement of the kind referred to, comprises a waste-water receiving chamber having means whereby it may be attached to the lower end of the waste-pipe and also having means whereby it may be supported upon the edge of a receptacle, said chamber having in its bottom end a discharge aperture controlled by a float-actuated flap valve pivoted between opposite sides of the chamber, the

arrangement being such that, when the water in the receptacle is below a certain level, the valve is maintained in an open raised and over-centre position in which the water flowing through the chamber has no tendency to close it, whereas when the float is raised due to the rising of the water in the receptacle the valve is caused to turn beyond a dead-centre vertical position towards the discharge aperture until the pressure of the waste water upon its upwardly-presented face causes the valve to close the said discharge aperture.

Figure 1 of the accompanying drawing shows a fitting, constructed in accordance with the present invention, in position on the end of a waste-pipe arranged to discharge water into an open bucket.

Figure 2 is on a larger scale and is a vertical section through the fitting shown in Figure 1, fully-open and partly-closed positions of a float-operated flap valve which is provided being represented in full lines and in dotted lines, respectively, but a clip, by means of which the fitting may be secured to the bucket, not being shown.

Figure 3 is a vertical section similar to Figure 2, but showing the valve in its fully-closed position.

Figure 4 is an underside view of the fitting, the valve being fully closed, on the same scale as Figures 2 and 3.

Referring to the drawing, a waste-water discharge arrangement for a sink or wash-basin in a caravan comprises a waste-pipe 1 connected to the said sink or wash-basin (which is not shown) and arranged to discharge into an open bucket 2 placed on the ground beneath the caravan floor. Attached to the lower end of the waste-pipe 1, so as to receive water therefrom, is a fitting 3 comprising a chamber 4 of a hollow cylindri-

[Price 2s. 8d.]

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cal form, with a curved vertical side wall 5, and with flat circular end plates 6, 7, at top and bottom. The top end plate 6 of the chamber 4 carries a short circular-sectioned  
 5 upwardly-extending inlet pipe 8 opening at 8a into the chamber 4 and adapted to fit inside the waste-pipe 1, the latter being usually of rubber, and to be secured thereto  
 10 by a suitable clip or strap 9. The diameter of the said inlet pipe 8 is, in the embodiment described and shown, approximately half that of the cylindrical chamber 4, and this pipe 8 is eccentrically disposed with respect  
 15 to the chamber 4, being situated on the top plate 6 substantially to one side of a diameter thereof. The bottom end plate 7, on the other hand, is provided with a large semi-circular opening 10 forming a discharge  
 20 aperture for the chamber 4, the said semi-circular aperture 10 being disposed directly below the inlet opening 8a, and its curved edge being concentric with the bottom plate 7. The chamber 4 carries on its outside a bracket 11 provided with a spring  
 25 clip 12, as shown, or the chamber may carry any other suitable part by means of which the fitting 3 can be secured to, or supported upon, the rim of the waste-bucket, 2, with the discharge aperture 10 inside the  
 30 mouth of the latter.

Pivoted between the opposite sides of the curved side wall 5 of the chamber 4 is a semi-circular plate 13 constituting a flap valve which can lie horizontally against the  
 35 bottom plate 7, as shown in Figure 3, to close the aforesaid semi-circular discharge aperture 10 of the chamber 4. The pivot for this valve 13 is shown at 14 and is formed from wire rodding, the said pivot 14, which is secured to one edge of the valve plate 13,  
 40 extending horizontally and transversely between bearing holes 15 in the chamber, and being disposed just above the unapertured half of the bottom plate 7 and parallel to, but slightly to one side of, the straight or diametrical edge of the discharge aperture 10.  
 45 One end of the said pivot 14 is extended outside the chamber 4 and is bent downwards and continued as an integral depending arm 16 on the lower end of which is mounted  
 50 a spherical cork or other float 17, adapted, when the device is in use, to lie some distance within the waste-water bucket or receptacle 2. The other end of the pivot 14 is also  
 55 extended outside the chamber 4, and is provided with a short lever 18. The inner face of the flap valve 13 carries a short arcuate stay 19 having a turned-out foot 20.

The arrangement is such that when the  
 60 float 17 lies clear of the water it takes up a position in which the arm 16 forming the extension of the pivot 14 lies downwardly inclined, with the flap valve 13 carried by the pivot 14 turned upwards by the weight of the  
 65 float 17 to lie in an almost upright but over-

centre position, shown in full lines in Figure 2, in which it is inclined at an acute angle with respect to the unapertured half of the bottom plate 7, so as to leave the discharge  
 70 aperture 10 open and so as to be out of the direct path of any water flowing through the chamber 4 from the inlet 8a to the discharge aperture 10. When the valve 13 is in this position the foot 20 engages the plate 7 to  
 75 form a stop. When, however, the float 17 is moved upwards, such as by a rising level in the bucket or receptacle 2, the arm 16 carrying the float 17, and the pivot 14 integral with the said arm 16, will turn and  
 80 cause the flap valve 13 to move past a dead-centre vertical position and towards its aforesaid horizontal or aperture-closing position.

In use, the inlet pipe 8 of the fitting 3 is attached to the end of the waste-pipe 1 as  
 85 stated, and the chamber 4 is clipped as shown, or otherwise secured, to the rim of the waste-bucket 2, so that water can flow through the discharge aperture 10 into the  
 90 latter, and so that the float 17 is disposed inside the mouth of the bucket 2 and lies some distance below the overflow level. As long as the water level in the bucket 2 lies below the float 17, so that the latter hangs by its  
 95 own weight, the flap valve 13 of the fitting lies in the inoperative and almost upright position, just over a dead-centre vertical position, shown in full lines in Figure 2, with the stop 20 engaging the plate 7, and in this  
 100 position waste water from the waste-pipe can flow freely through the chamber 4 and through the discharge aperture 10 therein into the bucket 2 without tending to close the valve. When, however, the water level in the bucket 2 reaches the float 17 and  
 105 causes the latter to rise, the flap valve 13 is turned past its vertical dead-centre position into the path of the waste water flowing through the chamber 4, so that a face of the valve 13 is presented to the said flow, as  
 110 shown in dotted lines in Figure 2, and the consequent pressure of the water upon the said face of the valve 13 causes the said valve to turn into its operative or horizontal position to close the discharge aperture 10  
 115 (Figure 3). Overflowing of the waste-bucket 2 is thus prevented, and once the discharge aperture 10 has closed, any further water from the sink or wash-basin will collect in the chamber 4 and rise up the waste-pipe 1, so  
 120 that the user is thus visually warned that the waste-bucket is full. The float 17 can be reset, and any waste water trapped in the chamber 4 and pipe 1 after the closing of the valve 13 can be discharged, by manual  
 125 depression of the lever 18.

If desired, the improved fitting may be applied to waste-water discharge arrangements in huts or like temporary dwellings  
 130 in which a waste-pipe from a sink or wash-

basin discharges into a bucket on the floor of the dwelling beneath the sink.

What I claim is :—

1. A valve fitting, for use with a waste-water discharge arrangement of the kind referred to, comprising a waste-water receiving chamber having means whereby it may be attached to the lower end of the waste-pipe and also having means whereby it may be supported upon the edge of a receptacle, said chamber having in its bottom end a discharge aperture controlled by a float-actuated flap valve pivoted between opposite sides of the chamber, the arrangement being such that, when the water in the receptacle is below a certain level, the valve is maintained in an open raised and over-centre position in which the water flowing through the chamber has no tendency to close it, whereas when the float is raised due to the

rising of the water in the receptacle the valve is caused to turn beyond a dead-centre vertical position towards the discharge aperture until the pressure of the waste water upon its upwardly-presented face causes the valve to close the said discharge aperture.

2. A valve fitting, as claimed in Claim 1, having a spring clip for securing the said fitting to the rim or edge of the portable receptacle.

3. A valve fitting, for use with a waste-water discharge arrangement of the kind referred to, as herein described with reference to the accompanying drawing.

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#### PROVISIONAL SPECIFICATION.

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- 40 This invention relates to fittings for use with waste-water discharge arrangements for caravans or other temporary dwellings, such arrangements being of that kind comprising a waste-pipe attached to a sink or wash-basin and adapted to discharge its contents into an open or partly open portable receptacle placed below the sink or wash-basin, such as on the ground beneath the floor of a caravan.

- 50 Hitherto, it has been found that with arrangements of the above kind, the user of the sink or wash-basin often forgets to remove and empty the portable waste water receptacle (which is usually concealed from his view) at the proper time, with the result that the receptacle overflows and causes considerable inconvenience. The object of the present invention is the provision of simple and novel means for preventing overflowing of the waste water in the receptacle, and for enabling visual warning to be given to the user of the sink or wash-basin when the receptacle requires to be emptied.

- 60 According to the invention, a fitting, for use with a waste-water discharge arrangement of the kind referred to, comprises a chamber adapted to be attached to the lower end of the waste-pipe, to receive waste water therefrom, and provided with a float-actuated valve for controlling the discharge of the waste water into the portable receptacle, the

arrangement being such that, when the fitting is in use, the waste water in the receptacle raises the float when it reaches a certain level, so as to cause the valve in the fitting to close and prevent further discharge of waste water from the waste-pipe to the receptacle. Preferably the chamber of the fitting has a discharge aperture adapted to be closed by a flap valve pivotably mounted within the chamber, the pivot of the valve being extended outside the chamber and provided with an arm carrying the float, and the arrangement being such that when the float is out of contact with the waste water in the receptacle, the flap valve is maintained by the weight of the float in an open position in which it lies clear of the flow path of waste water through the chamber, but that when the float is raised the said valve is turned by its pivot so as to present a face of the flap to the said flow, and is then moved into its closed position by the pressure of the waste water upon the said face.

Thus, in carrying out a convenient embodiment of the invention, as described in connection with a fitting for use with a waste-water discharge arrangement for a sink or wash-basin in a caravan, in which the waste-pipe of the sink or waste-basin is arranged to discharge into an open bucket or receptacle placed on the ground beneath the caravan floor, the said fitting comprises a chamber adapted to be attached to the lower end of the waste-pipe to receive waste water therefrom. This chamber is of a hollow cylindri-

cal form, with a curved vertical side wall, and with flat circular end plates at top and bottom. The top end plate of the chamber carries a short circular sectioned upwardly-extending inlet pipe opening into the chamber and adapted to fit inside the waste-pipe, the latter being usually of rubber, and to be secured thereto by a suitable clip or strap. The diameter of the said inlet pipe is, in the embodiment described, approximately half that of the cylindrical chamber, and this pipe is eccentrically disposed with respect to the chamber, being situated on the top plate substantially to one side of a diameter thereof. The bottom end plate, on the other end, is provided with a large semi-circular opening forming a discharge aperture for the chamber, the said semi-circular aperture being disposed directly below the inlet opening, and being concentric with the bottom plate. The chamber carries on its outside a spring clip or other suitable part by means of which it can be secured to the rim of the waste-bucket, with the discharge aperture inside the mouth of the latter.

Pivoted between the curved sides of the chamber, is a semi-circular plate constituting a flap valve adapted to lie horizontally against the bottom plate to close the aforesaid semi-circular discharge aperture of the chamber. The pivot for this valve is formed from wire rodding and extends horizontally and transversely between bearing holes in the chamber, being disposed just above the unapertured half of the bottom plate and parallel to, but slightly to one side of, the straight or diametrical edge of the discharge aperture. One end of the said pivot is extended outside the chamber and this extension is bent downwards and continued as an integral depending arm on the lower end of which is mounted a cylindrical cork or other float, adapted, when the device is in use, to lie some distance within the waste-water bucket or receptacle. The arrangement is such that when the float lies clear of the water it takes up a position in which the arm forming the extension of the pivot lies slightly inclined to the vertical, with the flap valve carried by the pivot turned upwards by the weight of the float to lie against the chamber side in an almost upright position in which it is inclined at an acute angle with respect to the unapertured half of the bottom plate, so as to leave the discharge aperture open and so as to be out

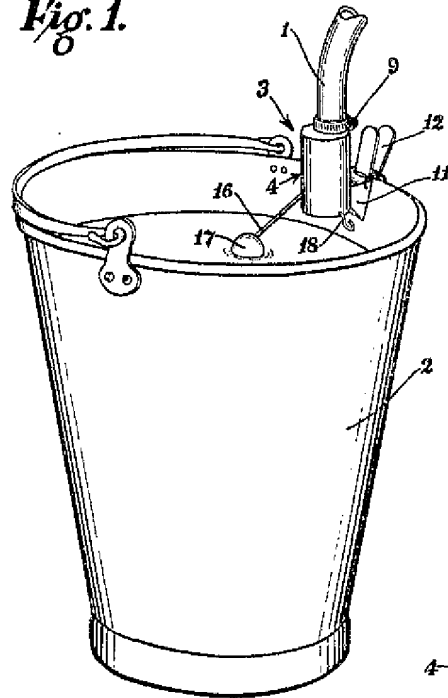
of the path of any water flowing through the chamber from the inlet to the discharge aperture. When, however, the float is moved upwards, such as by a rising level in the bucket or receptacle, the arm carrying the float, and the pivot integral with the said arm, will turn and cause the flap valve to move away from the chamber side, past a vertical position, towards its aforesaid horizontal or aperture-closing position.

In use, the inlet pipe of the fitting is attached to the end of the waste-pipe as stated, and the chamber is clipped or otherwise secured to the rim of the waste-bucket, so that water can flow through the discharge aperture into the latter, and so that the float is disposed inside the mouth of the bucket and lies some distance below the overflow level. As long as the water level in the bucket lies below the float, so that the latter hangs by its own weight, the flap valve of the fitting lies in its inoperative or almost upright position, against the side of the chamber, so that waste water from the waste-pipe can flow freely through the chamber and through the discharge aperture therein into the bucket. When, however, the water level in the bucket reaches the float and causes the latter to rise, the flap valve is turned past its vertical position into the path of the waste water flowing through the chamber, so that a face of the valve is presented to the said flow, and the consequent pressure of the water upon the said face of the valve causes the valve to turn into its operative or horizontal position to close the discharge aperture. Overflowing of the waste-bucket is thus prevented, and once the discharge aperture has closed, any further water from the sink or wash-basin will collect in the chamber and rise up the waste-pipe, so that the user is thus visually warned that the waste-bucket is full. The float can be reset, and any waste water trapped in the chamber and pipe after the closing of the valve can be discharged, by manual depression of the float-carrying arm.

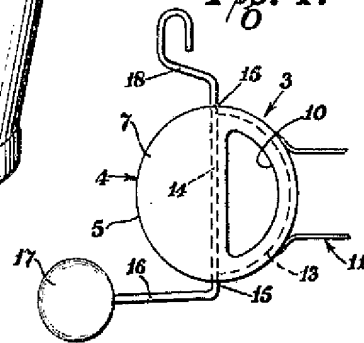
If desired, the improved fitting may be applied to waste-water discharge arrangements in huts or like temporary dwellings in which a waste-pipe from a sink or wash-basin discharges into a bucket on the floor of the dwelling beneath the sink.

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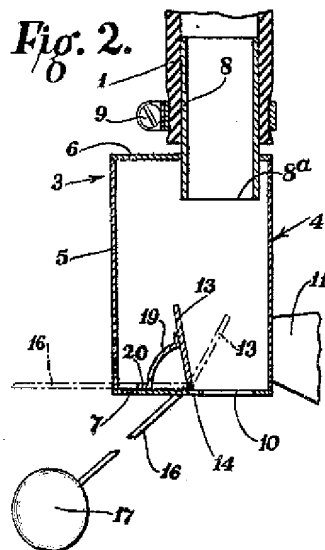
*Fig. 1.*



*Fig. 4.*



*Fig. 2.*



*Fig. 3.*

